Artificial Intelligence for Business Course

Course Overview

Leading organizations are using artificial intelligence (AI) across business functions to improve customer service, reduce risk, increase revenue, and optimize processes to increase efficiency.

However, the adoption of AI has remained out of reach of many organizations in mainstream government, industry and commerce because of the acute shortage of the needed specialized talent.

This course provides practical, comprehensive training that enables participants to immediately and effectively partake in enterprise AI projects. Designed for executives and professionals in all business functions across all industries, it does not require participants to have a technical background to benefit. The course provides a practical framework for understanding AI and how to adopt it in the enterprise, and grounding in basic and advanced concepts, considerations and techniques for building and deploying AI applications. Exercises, homeworks and case-studies, as well as hands-on labs using selected modern enterprise AI platforms, enhance participants' learning and expose them to practical environments. The course includes a group project and an individual project that enable participants to apply the concepts learnt in class to real world business challenges.

In addition, the course prepares participants for exams for internationally recognized AI certifications from RapidMiner. RapidMiner's platform has been consistently ranked a top three enterprise data science and machine learning platform for the past 6 years by Gartner.

Target Audience

Executives and professionals from all business functions across all industries including executive management, sales, marketing, business development, customer service, human resources, finance, administration, operations, risk and compliance, legal, audit, economics, procurement, engineering, IT, product development, and analytics.

Prerequisites

No prior knowledge of data science, machine learning, programming, or statistics is assumed
Ability to use computer programs such as Excel and business applications and knowledge of basic mathematics

Outcomes

Upon successful completion of the course, the participant should be able to:

- Identify tasks that can be automated by using AI
- Use a structured approach to deliver AI projects
- Identify business and technical objectives of an AI project
- Build a team with appropriate skills for successfully delivering the project
- Identify data sources and perform common data preparations
- Apply appropriate techniques and tools to build effective AI models
- Evaluate technical performance and fitness of purpose of AI models
- Select an enterprise AI development platform
- Use a modern AI platform to build and deploy AI models
- Use the results from an AI application
- Understand the ethical, societal, and legal issues associated with AI

Course Outline

Module 1: Artificial Intelligence in the Enterprise

1. Introduction to AI
   - What is AI?
   - Types of AI
   - Key AI technologies
   - AI, machine learning, deep learning and data science
   - What AI can do and cannot do
   - A brief history of AI
   - Exercises

2. AI in the Enterprise
   - Applications of AI
   - Artificial intelligence and enterprise decisions
   - Identifying opportunities for AI application
   - Automating enterprise processes
   - Approaches to AI adoption
   - Pragmatic enterprise AI
   - Myths and realities of artificial intelligence
   - Exercises

3. Building an Enterprise AI Application
   - Anatomy of an AI application
   - Methodologies for building AI applications
   - Overview of enterprise AI tools and platforms
   - Selecting an AI vendor
   - Hands-on lab: Introduction to KNIME, RapidMiner, Dataiku

4a. Understanding the Business Problem
   - Defining the business problem
   - Converting a business problem into an AI problem
   - Key roles for a successful AI project
   - Case study

4b. Building a Dataset
   - Sources of data
   - Types of data
   - Data selection criteria
   - Case study
   - Basic statistical measures
   - Hands-on lab: Visualizing data

5. Data Preparation
   - Types of data attributes
   - Transforming attribute values
   - Data cleaning
   - Feature selection
   - Feature generation
   - Hands-on lab: Data preparation

6. Building and Evaluating AI Models
    - Selecting algorithms
    - Bias, variance, overfitting and underfitting
    - Model training, validation and testing
    - Cross validation
    - Evaluation methods and performance criteria
    - Optimization and parameter tuning
    - Model selection
    - Evaluation against business objective
    - Hands-on lab: Evaluating model performance

Module 2: Fundamental AI Techniques and Algorithms – A Case Study, Hands-On Approach

1. Case study: Price Determination
    - Modeling methods: Linear regression, k-nearest neighbour, decision trees

2. Case study: Customer Segmentation
    - Modeling methods: k-means clustering, association rules

Module 3: Fundamental AI Techniques and Algorithms – A Case Study, Hands-On Approach

1. Case study: Churn Prediction
    - Modeling methods: Logistic regression, linear discriminant analysis, naïve Bayes classifier

2. Case study: Image Recognition
    - Modeling methods: Neural networks, deep learning

Module 4: Advanced AI Techniques and Algorithms – A Case Study, Hands-On Approach

1. Case study: Customer Segmentation (revisited)
    - Modeling methods: Social network analysis

2. Case study: Churn Prediction (revisited)
    - Modeling methods: Support vector machines

3. Case study: Detecting DDoS Cyber-attack
    - Modeling methods: Ensemble methods

4. Case study: Recommendation Engine
    - Modeling methods: Collaborative filtering, content-based filtering

5. Case study: Revenue Management
    - Modeling methods: Time series forecasting

Module 5a: Advanced AI Techniques and Algorithms – A Case Study, Hands-On Approach

1. Case study: Sentiment Analysis
    - Modeling methods: Natural language processing

2. Case study: Building a Chatbot
    - Modeling methods: Natural language processing

Day 5b: Deployment and Considerations

1. Deploying AI Models
    - Deployment considerations
    - Deployment approaches
    - Performance monitoring
    - Case study

2. Ethical, Societal and Legal Considerations
    - Society's perception of AI
    - Bias
    - Privacy
    - Security implications: digital, physical and political
    - The future of work
    - Case study
    - Exercises

Course Delivery

Duration: 5 weeks, 1 module per week
Classroom: Lectures, exercises, case-studies, hand-on labs on enterprise AI platforms
Homework: At the end of each module
Group project
Individual work-related project (submission for evaluation by course instructor is optional but recommended)

Course Dates (pick one group from the options below)

Group 1: Fifteen evenings 1800Hrs to 2000Hrs: September 2019, 24-26; October 2019, 1-3; 8-10; 15-17; 22-24
Group 2: Five Fridays 0830Hrs to 1600Hrs: September 2019, 27; October 2019, 4,11,18,25
Group 3: Five Saturdays 0830Hrs to 1600Hrs: September 2019, 28; October 2019, 5,12,19,26

Course Material

Lecture notes
Guide notes for group project
Workbook for individual work-related project

Awards

Earn a course certificate upon fulfilment of course requirements

RapidMiner Certification
The course prepares participants for exams for internationally recognized AI certifications from RapidMiner. RapidMiner's platform has been consistently ranked a top three enterprise data science and machine learning platform for the past 6 years by Gartner.

Venue
6th Floor Batanai Gardens, Corner Jason Moyo Avenue/First Street, Harare, Zimbabwe

Price Per Participant
RTGS 13,330

Payment
Deposit/transfer payment into the bank account below, email proof of payment to events@sdscope.com, and register each participant for their selected class at www.sdscope.com/events.

Bank Name: CABS Account Name: Softclick Investments Account Number: 1005111049

If you require a quotation, invoice or proforma invoice send your request to events@sdscope.com

Registration
Stay informed by completing the registration form for your class of interest at www.sdscope.com/events.

Course Instructor

Shepherd Fungayi CEO SDscope
Certified Machine Learning Master
Certified Data Engineering Professional

Started professional career as a telecommunications engineer over 20 years ago
Deep understanding of ICT technology architectures
Experience in delivering IT, analytics and artificial intelligence projects in telecommunications and financial services industries
LinkedIn Profile: www.linkedin.com/in/shepherd-fungayi

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